1874MNRAS..34..393B

excessively minute, and would be at least 11·5 mag. of Struve's scale. I estimated the angle at about 60° more than the other companion, and the distance a little more than 5″ greater, giving approximately, P = 190°; D = 25″. A single measure of Struve's companion, and Dembowski's following pair, for the purpose of positive identification gave 133° and 328° respectively. The new companion is a difficult object for my 6-inch aperture, but two measures were obtained giving P = 196°. This star is not in the *Positiones Mediæ*. I found that it was identical with Weisse V. 518 (9 mag.)

In examining the neighbouring stars on this occasion I found a much closer pair than either of those mentioned, $2^m\ 52^s$ preceding, and 7′·8 north of Σ 707. This is *Arg.* (+ 34°) 1033, and given in that catalogue as 8·9 mag., while Σ 707 is rated 9·1 mag. To me it appeared brighter than either of the stars measured by Dembowski, but a little fainter than Struve's. The distance I estimated as 2″, and a mean of five measures of the angle gave 202°. In the field a short distance following is a 10″ pair of very minute stars.

Chicago, 1874, *April* 24.

Note on the Double Stars, Σ 1801 *and* O Σ 265. By S. W. Burnham, Esq.

Dembowski, in his measures of Struve's double stars (*Astron. Nachr.* 1736) has this note to Σ 1801: "Aucun satellite—et pour la deuxième fois" (1865·4). A few evenings since I looked this up, and found it without difficulty. It is a faint and insignificant pair, but now a very easy object with my 6-inch refractor. Struve gave P = 64°·5 : D = 18″·44 : Mags. 9, 10·5. A rough measure of the angle for the purpose of certain identification made it 66°. The magnitudes of the components appeared to be about as estimated by Struve. It would seem that the companion is variable, unless by some accident Dembowski looked in the wrong place. About $2^m\ 11^s$ following this pair and 4′ south is a similar but rather brighter pair, which at first I took to be the one in question, with a considerable change in position-angle, but found to be identical with H 2701. Herschel gives no angle, but distance as 15″. A mean of 3 measures resulted in finding P = 36°. The only other observations or mention of Σ 1801 with which I am acquainted are by Sir John Herschel, who examined it twice, and noted it in his Fourth catalogue, and once in the Fifth catalogue. In the former his magnitudes are 9, 10; in the latter, 9·10, 11.

The double star O Σ 265 is also noted by Dembowski, "point de

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1874MNRAS..34..394B

satellite" (1866·3). This is one of the pairs excluded by Otto Struve in the Catalogue of 1850. I see the companion now, although not without some difficulty. In the Catalogue of 1843 the magnitudes are 7, 10, and distance 12″. I do not know of any measures of the position-angle. It is very nearly preceding, or about 270°, and is certainly much smaller than 10 of Struve's scale.

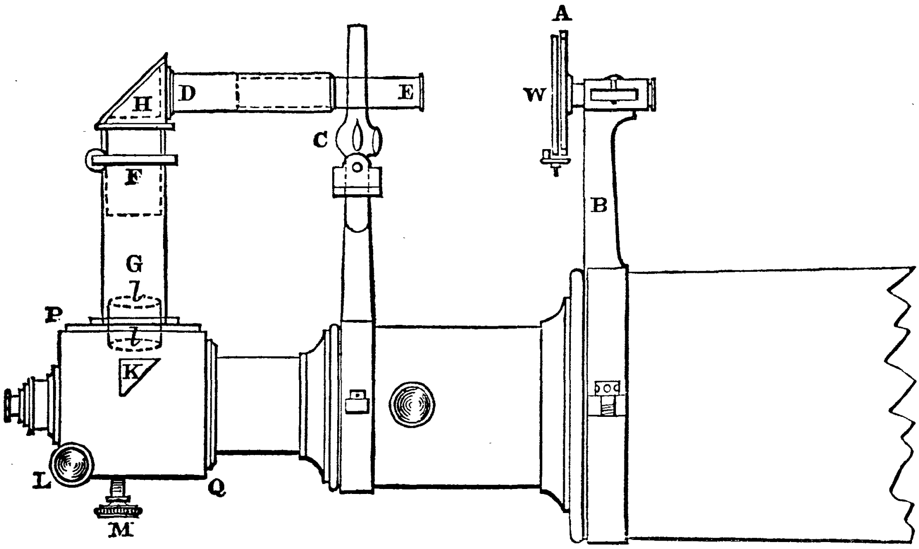
Chicago, 1874, *May* 17.

On a New Form of Position Micrometer.

By G. P. Bidder, Esq., Q.C.

The accompanying diagram represents a form of position micrometer, designed more particularly for the measurement of faint objects.

The principle of its construction is to throw into the field of view, by means of reflectors, the image of illuminated wires; so producing the appearance of bright wires on a dark field. For purposes of differential measurement, this arrangement affords many advantages over the ordinary dark field micrometer (in which the wires placed in the field are illuminated by side-light), and is, I believe, greatly superior in the measurement of faint objects.



The micrometer, A, which only differs from the common position micrometer in having no eyepiece before the wires, is placed above the telescope, and attached to it by a firm support, B. The wires, W, are illuminated by a lamp, C, in front of them, which is carried on an upright rod attached to the telescope, and is

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